International Civil Aviation Organization

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WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTIETH MEETING

Montréal, 24 October to 04 November 2005

Agenda Item 2: Development of recommendations for amendments to the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284) for incorporation in the 2007-2008 Edition

DRAFT AMENDMENTS OF THE TECHNICAL INSTRUCTIONS TO ALIGN TO THE UN RECOMMENDATIONS — PART 2

(Presented by the Secretary)

SUMMARY

Below are the draft amendments to Part 2, Chapters 1 to 9 to reflect the decisions taken by the UN Committee of Experts on the Transport of Dangerous Goods and the Globally Harmonized System of Classification of Labelling of Chemicals at the second session (Geneva, 10 December 2004) and as modified by the decisions of WG/04 and WG/05.

(16 pages)
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INTRODUCTORY CHAPTER

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2. Classes, divisions, packing groups — definitions

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2.2 Many of the substances assigned to Classes 1 to 9 are deemed, without additional labelling, as being environmentally hazardous.

2.2.1 Wastes must be transported under the requirements of the appropriate class considering their hazards and the criteria in these Instructions.

2.3 Wastes not otherwise subject to these Instructions but covered under the Basel Convention, may be transported under Class 9.

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Chapter 1

CLASS 1 — EXPLOSIVES

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1.5 CLASSIFICATION OF EXPLOSIVES

Note. — For additional information regarding classification of explosives, see UN Recommendations, 2.1.3.1.4, 2.1.3.1.5 ~~and~~, 2.1.3.4.~~.~~ and 2.1.3.5.

1.5.1.1 Any substance or article having or suspected of having explosive characteristics must be considered for classification in Class 1 in accordance with the tests, procedures and criteria prescribed in Part I of the *UN Manual of Tests and Criteria*. Substances and articles classified in Class 1 must be assigned to the appropriate division and compatibility group in accordance with the procedures and criteria prescribed in that document.

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Chapter 2

CLASS 2 — GASES

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2.2 DIVISIONS

Substances of Class 2 are assigned to one of three divisions based on the primary hazard of the gas during transport.

Note.— UN 1950 ***Aerosols,*** *UN 2037* ***Receptacles, small, containing gas*** *and UN 2037* ***Gas cartridges*** *must be regarded as being in Division 2.1 when the criteria in 2.5.1a) are met.*

a) Division 2.1 — Flammable gases.

Gases which at 20°C and a standard pressure of 101.3 kPa:

i) are ignitable when in a mixture of 13 per cent or less by volume with air; or

ii) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit. Flammability must be determined by tests or by calculation in accordance with methods adopted by ISO (see ISO Standard 10156/1996). Where insufficient data are available to use these methods, tests by a comparable method recognized by the appropriate national authority must be used.

Note.— ***Aerosols*** *(UN 1950) and UN 2037* ***Receptacles, small, containing gas*** *must be regarded as being in Division 2.1 when the criteria in 2.5.2 are met.*

b) Division 2.2 — Non-flammable, non-toxic gases.

Gases which ~~are transported at a pressure not less than 280 kPa at 20°C, or as refrigerated liquefied gases, and which~~:

i) are asphyxiant — gases which dilute or replace the oxygen normally in the atmosphere; or

ii) are oxidizing — gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does; or

iii) do not come under the other divisions.

c) Division 2.3 — Toxic gases.

Gases which:

i) are known to be so toxic or corrosive to humans as to pose a hazard to health; or

ii) are presumed to be toxic or corrosive to humans because they have an LC_{50} value equal to or less than 5 000 mL/m^3 (ppm) when tested in accordance with 6.2.1.3.

Note.— Gases meeting the above criteria owing to their corrosivity are to be classified as toxic with a subsidiary corrosive risk.

2.2.1 Gases of Division 2.2, other than refrigerated liquefied gases, are not subject to these Instructions if they are transported at a pressure less than 280 kPa at 20 °C.

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Chapter 3

CLASS 3 — FLAMMABLE LIQUIDS

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3.1 DEFINITION AND GENERAL PROVISIONS

3.1.1 Class 3 includes the following substances:

a) Flammable liquids (see 3.1.2 and 3.1.3);

b) Liquid desensitized explosives (see 3.1.4).

3.1.2 Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example paints, varnishes, lacquers, etc., but not including substances otherwise classified on account of their dangerous characteristics) which give off a flammable vapour at temperatures of not more than ~~60.5°C~~ 60°C, closed-cup test, or not more than 65.6°C, open-cup test, normally referred to as the flash point. This class also includes:

a) liquids offered for transport at temperatures at or above their flash point; and

b) substances that are transported or offered for transport at elevated temperatures in a liquid state and which give off a flammable vapour at a temperature at or below the maximum transport temperature (i.e. the maximum temperature likely to be encountered by the substance in transport).

Note. — Since the results of open-cup tests and of closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to make allowance for such differences would be within the spirit of this definition.

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Table 2-4. Packing group based on flammability

Packing group	*Flash point (closed-cup)*	*Initial boiling point*
I	—	≤35°C
II	<23°C	>35°C
III	≥23°C, ≤~~60.5°C~~60°C	>35°C

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Chapter 4

CLASS 4 — FLAMMABLE SOLIDS; SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION; SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES

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4.2.3 Division 4.1 — Self-reactive substances

4.2.3.1 *Definitions and properties*

4.2.3.1.1 Definitions

For the purposes of these Instructions:

a) Self-reactive substances are thermally unstable substances liable to undergo a strongly exothermic decomposition even without the participation of oxygen (air). The following substances must not be considered to be self-reactive substances of Division 4.1 if:

i) they are explosives according to the criteria of Class 1;

ii) They are oxidizing substances according to the ~~assignment procedure in 5.2.1.1~~ classification procedure for Division 5.1 (see 5.2.1.1) except that mixtures of oxidizing substances which contain 5.0 percent or more of combustible organic substances must be subjected to the classification procedure defined in Note 3.

iii) they are organic peroxides according to the criteria of Division 5.2;

iv) their heat of decomposition is less than 300 J/g; or

v) their self-accelerating decomposition temperature is greater than 75°C for a 50 kg package.

Note.1— The heat of decomposition can be determined by using any internationally recognized method, e.g. differential scanning calorimetry and adiabatic calorimetry.

Note. 2 — Any substance which shows the properties of a self-reactive substance must be classified as such, even if this substance gives a positive test result, according to 4.3.2 for inclusion in Division 4.2.

Note. 3 — Mixtures of oxidizing substances meeting the criteria of Division 5.1 which contain 5.0 percent or more of combustible organic substances, which do not meet the criteria mentioned in (i), (iii), (iv) or (v) above, must be subjected to the self-reactive substance classification procedure.

A mixture showing the properties of a self-reactive substance, type B to F, must be classified as a self-reactive substance of Division 4.1.

A mixture showing the properties of a self-reactive substance, type G, according to the principle of 2.4.2.3.3.2 (g) of the UN Recommendations must be considered for classification as a substance of Division 5.1 (see 5.2.1.1).

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Table 2-6. List of currently assigned self-reactive substances in packages

Note.— Self-reactive substances to be transported must fulfil the classification and the control and emergency temperatures (derived from the self-accelerating decomposition temperature (SADT)) as listed.

Self-reactive substance	*Concentration (%)*	*Control temperature (°C)*	*Emergency temperature (°C)*	*UN generic entry*	*Notes*
Acetone-pyrogallol copolymer 2-diazo-1-naphthol-5-sulphonate	100			3228	

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Chapter 5

CLASS 5 — OXIDIZING SUBSTANCES; ORGANIC PEROXIDES

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5.2.1 Classification in Division 5.1

5.2.1.1 Oxidizing substances are classified in Division 5.1 in accordance with the test methods, ~~and~~ procedures and criteria in 5.2.2, 5.2.3 and ~~in~~ the *Manual of Tests and Criteria,* Part III, section 34. In the event of divergence between test results and known experience, the appropriate authority of the State of Origin must be consulted to establish the appropriate classification and packing group.

[Note.— Where substances of these Division are listed in the Dangerous Goods List in Chapter 3.2, reclassification of those substances in accordance with this criteria must be undertaken only when this is necessary for safety.]

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Chapter 6

CLASS 6 — TOXIC AND INFECTIOUS SUBSTANCES

INTRODUCTORY NOTES

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Table 2-8. Grouping criteria for administration through oral ingestion, dermal contact and inhalation of dusts and mists

Packing group	*Oral toxicity LD_{50} (mg/kg)*	*Dermal toxicity LD_{50} (mg/kg)*	*Inhalation toxicity by dusts and mists LC_{50} (mg/L)*
I	~~≤5~~	~~≤40~~	~~≤0.5~~
II	~~>5, ≤50~~	~~>40, ≤200~~	~~>40, ≤200~~
III[a]	~~solids: >50, ≤200 liquids: >50, ≤500~~	~~>200, ≤1 000~~	~~>2, ≤10~~
I	≤ 5.0	≤ 50	≤ 0.2
II	> 5.0 and ≤ 50	> 50 and ≤ 200	> 0.2 and ≤ 2.0
III	>50 and ≤300	> 200 and ≤ 1000	> 2.0 and ≤ 4.0

Note.— Tear gas substances having toxicity data corresponding to Packing Group III values are nevertheless included in Packing Group II.

Secretarial Note.— Amendments to Division 6.2 are shown in WP/13

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Chapter 7

CLASS 7 — RADIOACTIVE MATERIAL

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7.1 DEFINITION OF CLASS 7

7.1.1 Radioactive material means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in 7.7.2.1 to 7.7.2.6.

7.1.2 The following radioactive materials are not included in Class 7 for the purposes of these Instructions:

a) radioactive material implanted or incorporated into a person or live animal for diagnosis or treatment;

b) radioactive material in consumer products which have received regulatory approval, following their sale to the end user;

c) natural material and ores containing naturally occurring radionuclides which are either in their natural state or have only been processed for purposes other than for extraction of the radionuclides, and are not intended to be processed for use of these radionuclides, provided the activity concentration of the material does not exceed 10 times the values specified in ~~7.7.2.~~ 7.7.2.1 (b), or calculated in accordance with 7.7.2.2 to 7.7.2.6

d) non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the limit specified in the definition of contamination in 7.2.

7.2 DEFINITIONS

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Approval:

Multilateral approval. The approval by the relevant competent authority ~~both~~ of the country of origin of the design or shipment, as applicable and also, where ~~and of each country~~ ~~which~~ the consignment is to be transported through or into any other country, approval by the competent authority of that country. [The term "through or into" specifically excludes "over", i.e. the approval and notification requirements must not apply to a country over which radioactive material is carried in an aircraft, provided that there is no scheduled stop in that country.]

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Freight container in the case of radioactive material transport. An article of transport equipment designed to facilitate the transport of packaged goods, by one or more modes of transport without intermediate reloading which is ~~It must be~~ of a permanent enclosed character, rigid and strong enough for repeated use, and must be fitted with devices facilitating its handling, particularly in transfer between aircraft and from one mode of transport to another. A small freight container is that which has either an

overall outer dimension less than 1.5 m, or an internal volume of not more than 3 m^3. Any other freight container is considered to be a large freight container.

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Specific activity of a radionuclide. The activity per unit mass of that nuclide. The specific activity of a material must mean the activity per unit mass ~~or volume~~ of the material in which the radionuclides are essentially uniformly distributed.

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Uranium — natural, depleted, enriched:

Natural uranium. ~~Chemically separated uranium~~ Uranium (which may be chemically separated) containing the naturally occurring distribution of uranium isotopes (approximately 99.28 per cent uranium-238, and 0.72 per cent uranium-235 by mass).

7.3 LOW SPECIFIC ACTIVITY (LSA) MATERIAL, DETERMINATION OF GROUPS

7.3.1 Radioactive material which by its nature has a limited specific activity, or radioactive material for which limits of estimated average specific activity apply, is termed low specific activity or LSA material. External shielding materials surrounding the LSA material must not be considered in determining the estimated average specific activity.

7.3.2 LSA material must be in one of three groups:

a) LSA-I

i) uranium and thorium ores and concentrates of such ores, and other ores containing naturally occurring radionuclides which are intended to be processed for the use of these radionuclides;

ii) ~~solid unirradiated~~ natural uranium, ~~or~~ depleted uranium, ~~or~~ natural thorium or their ~~solid or liquid~~ compounds or mixtures~~;~~, providing they are unirradiated and in solid or liquid form;

iii) radioactive material for which the A_2 value is unlimited, excluding fissile material in quantities not excepted under 6;7.10.2; or

iv) other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the values for activity concentration specified in 7.7.2.1 to 7.7.2.6, excluding fissile material in quantities not excepted under 6;7.10.2.

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7.4 REQUIREMENTS FOR SPECIAL FORM RADIOACTIVE MATERIAL

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7.4.6 Specimens that comprise or simulate radioactive material enclosed in a sealed capsule may be excepted from:

a) the tests prescribed in 7.4.5 a) and b) provided the mass of the special form radioactive material:

(i) is less than 200 g and they are alternatively subjected to the Class 4 impact test prescribed in ISO 2919:~~1980~~ 1990 "Radiation protection - Sealed radioactive sources General requirements and classification"; or

(ii) is less than 500 g and they are alternatively subjected to the Class 5 impact test prescribed in ISO 2919:1990: "Sealed Radioactive Sources - Classification; and

b) the test prescribed in 7.4.5 d) provided they are alternatively subjected to the Class 6 temperature test specified in ISO 2919:~~1980~~ 1990 "Sealed radioactive sources — Classification".

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7.7 ACTIVITY LIMITS AND MATERIAL RESTRICTIONS

7.7.1 Contents limits for packages

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7.7.1.7 *Packages containing fissile material*

Unless excepted by 6;7.10.2 ~~P~~packages containing fissile material must not contain:

a) a mass of fissile material different from that authorized for the package design;

b) any radionuclide or fissile material different from those authorized for the package design; or

c) contents in a form or physical or chemical state, or in a spatial arrangement, different from those authorized for the package design;

as specified in their certificates of approval, where appropriate.

7.7.1.8 *Packages containing uranium hexafluoride*

~~The mass of uranium hexafluoride in a package must not exceed a value that would lead to an ullage smaller than 5 per cent at the maximum temperature of the package, as specified for the plant systems~~

~~where the package must be used. The uranium hexafluoride must be in solid form and the internal pressure of the package must be below atmospheric pressure when presented for transport.~~

Packages containing uranium hexafluoride must not contain:

(a) a mass of uranium hexafluoride different from that authorized for the package design;

(b) a mass of uranium hexafluoride greater than a value that would lead to an ullage smaller than 5 percent at the maximum temperature of the package as specified for the plant systems where the package will be used; or

(c) uranium hexafluoride other than in solid form or at an internal pressure above atmospheric pressure when presented for transport.

7.7.2 Activity levels

7.7.2.1 The following basic values for individual radionuclides are given in Table 2-13:

a) A_1 and A_2 in TBq;

b) activity concentration for exempt material in Bq/g; and

c) activity limits for exempt consignments in Bq.

7.7.2.2 For individual radionuclides which are not listed in Table 2-13, the determination of the basic radionuclide values referred to in 7.7.2.1 must require ~~competent authority approval or, for international transport,~~ multilateral approval. ~~Where the chemical form of each radionuclide is known, i~~It is permissible to use the A_2 value ~~related to its solubility class~~ calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal and accident conditions of transport are taken into consideration. Alternatively, the radionuclide values in Table 2-14 may be used without obtaining competent authority approval.

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Table 2-13 Basic radionuclides values for individual radionuclides

Radionuclide (atomic number)	*A_1 (TBq)*	*A_2 (TBq)*	*Activity concentration for exempt material (Bq/g)*	*Activity limit for an exempt consignment (Bq)*
Te-121m	5×10^0	3×10^0	1×10^2	~~1×10^5~~ 1×10^6

(a) A1 and/or A2 values for these parent radionuclides include contributions from daughter radionuclides with half-lives less than 10 days, as listed in the following:

Mg-28	Al-28
Ar-42	K-42
Ca-47	Sc-47
Ti-44	Sc-44
Fe-52	Mn-52m
Fe-60	Co-60m
Zn-69m	Zn-69
Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Sr-91	Y-91m
Sr-92	Y-92
Y-87	Sr-87m
Zr-95	Nb-95m
Zr-97	Nb-97m, Nb-97
Mo-99	Tc-99m
Tc-95m	Tc-95
Tc-96m	Tc-96
Ru-103	Rh-103m
Ru-106	Rh-106
Pd-103	Rh-103m
Ag-108m	Ag-108
Ag-110m	Ag-110
Cd-115	In-115m
In-114m	In-114
Sn-113	In-113m
Sn-121m	Sn-121
Sn-126	Sb-126m
Te-118	Sb-118
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
I-135	Xe-135m

Xe-122	I-122
Cs-137	Ba-137
Ba-131	Cs-131
Ba-140	La-140
Ce-144	Pr-144m, Pr-144
Pm-148m	Pm-148
Gd-146	Eu-146
Dy-166	Ho-166
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m
Os-194	Ir-194
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195
Pb-210	Bi-210
Pb-212	Bi-212, Tl-208, Po-212
Bi-210m	Tl-206
Bi-212	Tl-208, Po-212
At-211	Po-211
Rn-222	Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Po-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-225	Ac-225, Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ra-226	Rn-222, Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ac-227	Fr-223
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-234	Pa-234m, Pa-234
Pa-230	Ac-226, Th-226, Fr-222, Ra-222, Rn-218, Po-214
U-230	Th-226, Ra-222, Rn-218, Po-214
U-235	Th-231
Pu-241	U-237
Pu-244	U-240, Np-240m
Am-242m	Am-242, Np-238
Am-243	Np-239
Cm-247	Pu-243
Bk-249	Am-245
Cf-253	Cm-249

(b) Parent nuclides and their progeny included in secular equilibrium are listed in the following:

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Ag-108m	Ag-108
Cs-137	Ba-137m

~~Ce-134~~	~~La-134~~
Ce-144	Pr-144
Ba-140	La-140
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
~~Rn-220~~	~~Po-216~~
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
~~Th-226~~	~~Ra-222, Rn-218, Po-214~~
Th-228	Ra-224, Rn-220, Po-216, Pb212, Bi-212, Tl208 (0.36), Po-212 (0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-nat	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-nat	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
~~U-240~~	~~Np-240m~~
Np-237	Pa-233
Am-242m	Am-242
Am-243	Np-239

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Table 2-14. Basic radionuclide values for unknown radionuclides or mixtures

Radioactive contents	*A_1 (Tbq)*	*A_2 (Tbq)*	*Activity concentration for exempt material (Bq/g)*	*Activity limit for an exempt consignment (Bq)*
Only beta- or gamma-emitting nuclides are known to be present	0.1	0.02	1×10^{1}	1×10^{4}
~~Only~~a Alpha-emitting nuclides but no neutron emitters are known to be present	0.2	9×10^{-5}	1×10^{-1}	1×10^{3}
Neutron emitting nuclides are known to be present or no ~~No~~ relevant data are available	0.001	9×10^{-5}	1×10^{-1}	1×10^{3}

7.8 LIMITS ON TRANSPORT INDEX, CRITICALITY SAFETY INDEX, RADIATION LEVELS FOR PACKAGES AND OVERPACKS

7.8.1 Except for consignments under exclusive use, the transport index of any package or overpack must not exceed 10, nor must the criticality safety index of any package or overpack exceed 50.

7.8.2 Except for packages or overpacks transported under exclusive use and special arrangement under the conditions specified in 7;2.9.5.3, the maximum radiation level at any point on any external surface of a package or overpack must not exceed 2 mSv/h.

7.8.3 The maximum radiation level at any point on any external surface of a package or overpack under exclusive use must not exceed 10 mSv/h.

7.8.4 Packages and overpacks must be assigned to either category I-WHITE, II-YELLOW or III-YELLOW in accordance with the conditions specified in Table 2-15 and with the following requirements:

a) for a package or overpack, both the transport index and the surface radiation level conditions must be taken into account in determining which is the appropriate category. Where the transport index satisfies the condition for one category but the surface radiation level satisfies the condition for a different category, the package or overpack must be assigned to the higher category. For this purpose, category I-WHITE must be regarded as the lowest category;

b) the transport index must be determined following the procedures specified in 7.6.1.1 and 7.6.1.2;

c) if the surface radiation level is greater than 2 mSv/h, the package or overpack must be transported under exclusive use and under the provisions of 7;2.9.5.3; as appropriate;

d) a package transported under a special arrangement must be assigned to category III-YELLOW except under the provisions of 7.8.5;

e) an overpack which contains packages transported under special arrangement must be assigned to category III-YELLOW except under the provisions of 7.8.5.

7.8.5 In case of international transport of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, assignment to the category as required in 7.8.4 must be in accordance with the certificate of the country of origin of design.

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Chapter 8

CLASS 8 — CORROSIVES

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8.2 ASSIGNMENT OF PACKING GROUPS

8.2.1 Substances and preparations of Class 8 are divided among the three packing groups according to their degree of hazard in transport as follows:

a) Packing Group I: Very dangerous substances and prep-arations;

b) Packing Group II : Substances and preparations present-ing medium danger;

c) Packing Group III: Substances and preparations present-ing minor danger.

8.2.2 Allocation of substances in Class 8 to the packing groups referred to in the introduction to Part 3, Chapter 1 has been on the basis of experience, taking into account such additional factors as inhalation risk and reactivity with water, including the formation of hazardous decomposition products. New substances, including mixtures, can be assigned to packing groups on the basis of the length of time of contact necessary to produce full thickness destruction of human skin. ~~Substances~~ Liquids, and solids which may become liquid during transport, which are judged not to cause full thickness destruction of human skin must still be considered for their potential to cause corrosion to certain metal surfaces in accordance with the criteria in 8.2.5 c) (ii).

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Chapter 9

CLASS 9 — MISCELLANEOUS DANGEROUS SUBSTANCES AND ARTICLES

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9.2 ASSIGNMENT TO CLASS 9

9.2.1 Class 9 includes, inter alia

a) environmentally hazardous substances ~~liquid or solid substances pollutant to the aquatic environment and solutions and mixtures of such substances (including preparations and wastes)~~ are those that meet the criteria in 2.9.3 of the UN Model Regulations or that meet criteria in national or international regulations established by the national authority in a country of origin, transit or destination. See Part 3, Chapter 3, special provision A97.

Substances or mixtures dangerous to the aquatic environment not otherwise classified under these Instructions must be assigned to packing group III and designated:

UN 3077 **Environmentally hazardous substance, solid, n.o.s.** or
UN 3082 **Environmentally hazardous substance, liquid, n.o.s**

— END —